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ABSTRACT

Thirty-five second-year medical students from the University of Alabama (Birmingham) used the services of a commercial test tutoring company to help them prepare for the National Board of Medical Examiners Part I examination. These students scored significantly higher than students who were considered to have comparable ability, based upon basic science grade point average. (A number of issues are discussed which relate to the impact of tutoring programs on the licensure process, test security, and foreign medical school graduates who enter the medical profession in the United States). (Author/GDC)

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THE EFFECTS OF COMMERCIAL TUTORING ON MEDICAL LICENSURE EXAMINATIONS

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Abstract

A substantial number of U.S. and foreign medical students and graduates engage the services of commercial firms to assist them in preparation for medical licensure examinations. Very little is known about the effects of commercial tutoring upon exam scores, the methods by which these effects are obtained, or the impact of commercial tutoring upon the licensure process.

A total of 35 second year medical students from the University of Alabama in Birmingham utilized the services of a commercial test tutoring company to assist them in preparation for the June 1977 and June 1978 NBME, Part I examinations. These students scored significantly higher ($p < .01$) on the Part I exams than students with comparable basic science grade point averages.

This study raises questions concerning the impact of commercial tutoring on the licensure process for domestic students and students of foreign medical schools entering the U.S. medical profession through the COTRANS and related programs.

This study will be expanded to include data from those students who take the commercial course in preparation for the June 1979 NBME, Part I examination.

Key Words: Commercial Tutoring, Licensure Examinations, Test Preparation, National Boards

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Introduction and Statement of the Problem

In addition to the internal evaluation of medical students by faculty, some crucial decisions regarding admission, promotion, and licensure are based wholely, or in part, upon external standardized examinations, e.g., MCAT; NBME, Parts I, II, and III; FLEX; etc. In particular, the National Board of Medical Examiners (NBME) Part I represents a substantial hurdle and a crucial turning point in the academic preparation of many physicians. Not only is Part I, or its equivalent, required for licensure, but nearly half (41%) of U.S. medical schools list a passing score on the exam as a curriculum requirement.[1]

The NBME, Part I is a norm-referenced exam with the mean score set at 500 and the standard deviation set at 100. The passing score on Part I (380) is set at 1.2 standard deviations below the mean, resulting in an automatic failure rate of approximately 12%. This is obviously a highly competitive exam with serious consequences for failure; therefore, examination preparation is crucial for those students whose careers may be contingent upon a passing score.

It is no surprise, therefore, that entrepreneurs have established courses specifically designed to increase scores on the NBME, Part I and similar exams, and that significant numbers of students utilize these commercial courses as a part of their exam preparation.* With the advent of commercial test preparation, two issues of importance to medical schools, and the profession as a whole, are raised: (1) How effective are commercial test preparation courses? and, (2) Are the courses legitimate educational tools, or do they serve to circumvent the standards of the profession by providing some students an unfair advantage on the licensure exams? The wide spread impact of commercial test preparation courses and the concern over their legitimacy is emphasized by the fact that the Federal Trade Commission is currently investigating the multi-million-dollar business.[3] The question of the effectiveness of commercial test tutoring courses has not been answered by the commercial companies, who do not have access to exam results, nor by the medical schools. Lewis and Kuske[4], who have published the only significant study to date, concluded no effect due to commercial tutoring.

Research question: Does participation in a commercial test preparation course affect NBME, Part I performance?

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*One commercial company anticipates training 25,000 students in 1979.[2]

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Commercial Course

The commercial course reported in this study consisted of a series of audio tapes and supplementary written materials. The tapes were organized around items in the NBME format whereby a narrator would read a multiple choice question and give the possible responses. The student would answer the questions, and the taped narrator would explain, in detail, the logic associated with the correct response, as well as the faulty logic associated with each of the distractors. Students were expected to understand each practice item before progressing to the next, and this often necessitated supplementary reading and study. The tapes covered each of the basic sciences and students were free to select any part, or all, of the subject areas for study. In addition to basic science content, the commercial course also provided taped and written instructions in test-taking techniques.

Method

In order to prepare for the June, 1977 and June 1978 NBME, Part I exams, a total of 35 second year medical students from the University of Alabama in Birmingham (UAB) enrolled in a commercial test preparation course. These students will be referred to as the "commercial students". The remaining 271 UAB students who took the exams prepared for the Boards without benefit of the commercial course.

The 1977 (n=17) and 1978 (n=18) commercial course students were matched by basic science grade point average (BSGPA)* with equal numbers of students from the two classes, and their Part I scores were compared by non-directional t-tests for each of the years, 1977 and 1978, and for the 2 years combined. The BSGPA is an appropriate matching variable inasmuch as the Part I exam is a measure of basic science knowledge and the cumulative BSGPA is an indication of the students' basic science knowledge before the introduction of the experimental variable, method of test preparation. The correlations between UAB's BSGPA's and Part I scores were .77 and .71 in 1977 and 1978 respectively.

The commercial students were surveyed by questionnaire following each administration of the exam. Twenty-one (60%) of the commercial students responded to the surveys.

Results

Part I Scores

As illustrated in Table 1, the 1977 commercial course students scored significantly higher on Part I than did the matched students of equal BSGPA's. Although the 1978 commercial students scored an average of 24 points higher on Part I than the matched students, this difference was not significant at the .05 level (Table 2).

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*The commercial students' mean BSGPA was approximately one standard deviation below the class mean for each year of the study.

Table 1 - NBME Part I Scores of 1977 Commercial and Non-Commercial Students Matched by BSGPA

	n	Part I Mean	t
Commercial	17	503	3.05*
Non-Commercial	17	434	

*p <.01

Table 2 - NBME Part I Scores of 1978 Commercial and Non-Commercial Students Matched by BSGPA

	n	Part I Mean	t	
Commercial	18	448	1.04	N.S.
Non-Commercial	18	424		

Each of the 2 years taken separately represents a one-shot sample in which the small n may have led to spurious results. However, the two years combined produces both a respectable n of 35 and the additional stability of data collected over time. The analysis of data for the combined students from 1977 and 1978 indicated that the Part I mean score of 475 for the commercial students was significantly higher than the 429 mean for the matched students (Table 3).

Table 3 - Part I Scores for 1977 and 1978 Commercial and Non-Commercial Students Matched by BSGPA

	n	Part I Mean	t	
Commercial	35	475	2.81	p <.01
Non-Commercial	35	429		

Using basic science GPA as an indicator of the students' basic science knowledge level prior to preparation for Part I, it is apparent that UAB students who prepared by the commercial method performed significantly better on Part I than students of equivalent basic science knowledge who prepared by the traditional methods.

Student Survey

Students unanimously agreed that the course helped them with the exam, and all but one noted that they would take the course again under similar circumstances. Students noted the following characteristics of the commercial course which were of great value: (1) organization of study materials; (2) content highly relevant to the Part I exam; and (3) disciplined approach to review. Also mentioned as important were, confidence gained by taking the course and experience with practice tests.

Students were in agreement that the concepts covered in the commercial course were very closely related to the concepts covered on Part I. When asked if Part I items appeared verbatim in the commercial course, 76% responded, "yes", although they noted that the percentage of verbatim items was small.

Although the course was expensive ($550), the students generally agreed that paying for the course did not significantly increase their motivation to study. The commercial students did devote more time to exam preparation than did non-commercial students (12 wks. vs. 10 wks.), however an independent study of the UAB class taking the 1978 exam found no significant correlation between exam preparation time and Part I score.

Discussion and Implications

Results of this study indicate that the examinees benefited significantly from the commercial course. Were these benefits a result of an educationally sound review, or did they result from a prior exposure to actual Part I items or "concepts"? Our survey of students suggests a combination of both.

The commercial course seems to offer an educationally and rationally sound approach to test review. The Part I exam covers approximately two years of basic science material and the typical medical school allows only two weeks of class free time to prepare for the exam.[5] The commercial company offered students a well organized, condensed, review program which was directed toward the concepts most relevant to the Part I exam. No individual medical student has the resources, time or expertise to organize as complete or relevant a review program as that provided by the company. In addition, student feedback suggests that the commercial course employed sound educational approaches to the review sessions, e.g.: instant feedback, self-paced instruction and multi-media instruction.

On the other hand, 76% of the responding commercial students reported seeing items on Part I verbatim as they appeared in the commercial course. Although NBME security is tight, and additional measures are being taken[6], it is possible for previously used NBME items to be obtained. For example, the authors understand that it is possible to obtain old exams through sources in Mexico. Another possibility for obtaining Part I items is by simply polling students after they have taken the exam. Conducted in a systematic manner, this process could lead to the reconstruction of an entire exam. Employment of this procedure over a few years could not only provide one with a good idea of the concepts likely to be covered, but could also result in the acquisition of some items which would appear on subsequent exams inasmuch as the NBME includes a small number of previously used items on each exam.[6]

The potential impact of a non-academic incursion upon the licensure and promotion of medical students is more far-reaching than may be readily apparent. The primary route to licensure for U.S. medical students is through the NBME Parts I, II and III, with Part I being, by far, the most difficult hurdle. Given the potential for a few medical students to pass Part I with the aid of commercial tutoring, the probability of incompetent students graduating remains minimal due to the stringent internal admissions and evaluation processes of U.S. and Canadian medical schools, which function independent of the external licensure process. However, if the commercial course does provide some students with an unfair advantage, the remainder of students taking the NBME exams are penalized due to the normative scoring of the exams.

The most pressing danger lies with the influx of foreign medical graduates (FMG's)* and U.S. students of foreign medical schools. Although there are obviously many outstanding medical schools outside the U.S. and Canada, there is ample evidence to suggest the substandard ability of many of the applicants from foreign medical schools who seek advanced student and residency status in U.S. medical schools and teaching hospitals.[8-10] During the period of 1970 through 1974, 67% of the Coordinated Transfer System (COTRANS) students failed Part I, compared to 12% for U.S. students.[8] The failure rate on the Federation Licensure Examination (FLEX) of Fifth Pathway students and FMG's applying in New York state (1976-77) was 29% and 39% respectively, compared to 5% failure for U.S. and Canadian graduates.[9]

Virtually all of the U.S. students from foreign medical schools and FMG's seeking admittance to U.S. medical schools and residencies, or licensure, take the Educational Commission for Foreign Medical Graduates (ECFMG), the Visa Qualifying Examination (VQE), or the FLEX. All items on the ECFMG[11], VQE[7], and FLEX[11] are drawn from the NBME's pool of previously used items, therefore, if a commercial company were able to obtain previously used NBME items, it could potentially offer all items in advance to students and graduates taking these exams. Although the NBME has taken additional security measures to safeguard its valuable pool of validated items, it would appear to be a hopeless goal given the wide usage of the exams and the high motivation in some quarters to possess the items.

The authors suggest that most NBME security problems could be eliminated by the release of all items following each exam, thereby allowing everyone access to a massive pool of items. New exams could be constructed from the item pool, with a percentage of new items added each year. This is consistent with present NBME policy, with the exception of releasing items. This method has been successfully employed on the certification exam of the American Institute of Certified Accountants as well as the Dental Aptitude Test and the Law School Admissions Tests. Releasing items would preclude the possibility of exploitation resulting from access to old Board items and would not be detrimental to any company whose test preparation course is based on sound educational principles.

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*In 1976-77 FMG's filled 33% of the residency positions in the U.S.[7]

References

1. 1977-78 AAMC Curriculum Directory. Association of American Medical Colleges. Washington, DC
2. Ruck, D: The MCAT candidate's friend. American Medical News. Jan. 12, 1979
3. Lynch MC: Probe of coaching for scholastic tests raises issues about exams themselves. Wall Street Journal. Dec. 5, 1978
4. Lewis LA and Kuske TT: Commercial national board review programs: a case study at the Medical College of Georgia. JAMA 240: 754-755, 1978
5. Litzinger MJ and Welker WJ: National boards medical examination part I: a multipurpose tool? J Med Educ 54 Feb 1979
6. Security and credibility of national board examinations. The National Board Examiner. 24: 1-2 Jan., 1977
7. Special report on the first Visa Qualifying Examination. The National Board Examiner. 25: 2 Jan., 1978
8. Egan RL: US citizens and foreign medical schools. JAMA 232: 1028-1030, 1975
9. Stimmel B and Smith H: Career choice and performance on state licensing examinations of "fifth pathway" students. N Engl J Med 299: 227-230, 1978
10. Meskauskas JA, Benson JA, and Hopkins E: Performance of graduates of foreign medical schools on the examinations of the American Board of Internal Medicine. N Engl J Med 297: 808-810, 1977
11. Hubbard JP: Measuring Medical Education. Philadelphia, Lea and Febeger, 1978, p. 82: pp. 79-80